

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-7. (Canceled)

8. (Currently amended) A method of displaying related data sub-items corresponding to a ~~cursor-selected~~ an object displayed on a computer screen, the method comprising:

determining that a cursor is positioned to point at the ~~cursor-selected~~ object on the computer screen, wherein the ~~cursor-selected~~ object represents a variable incorporated into a line of program code that is currently displayed on the computer screen; is an object in a listing of program code under development;

~~loading the cursor-selected object;~~

evaluating the ~~cursor-selected~~ object to determine if the ~~cursor-selected~~ object:

has a variable value; and

has related data sub-items; ~~and~~

~~if the related data sub-items are capable of expansion into lower-tier sub-items;~~

assembling variable values for the ~~cursor-selected~~ object and the related data sub-items;

and

displaying on the computer screen the values of the ~~cursor-selected~~ object in a first display parent data tip window along with an expansion widget indicator of the related data sub-items, the display also including the lower-tier sub-items in expansion widget indicator operable to launch a second display child data tip window for displaying the related data sub-items together with associated data values for each individual data sub-item, the parent first and second display child data tip windows displayed simultaneously and overlaying at least a portion of the listing of the program code under development, wherein the cursor-selected object and the related data sub-items are related in a parent and child relationship.

9. (Canceled)

10. (Currently amended) The method of claim 8, wherein displaying the values of the ~~cursor-selected items and related sub-items~~ object further comprises displaying in the parent data tip window, a variable data value that is associated with the ~~cursor-selected object and values of the variables respectively~~.

11. (Currently amended) The method of claim 8, wherein the indication of a presence of the ~~lower-tier~~ related data sub-items is provided by a symbol to indicate that ~~lower-tier~~ related data sub-items exist and can be selected for display.

12. (Currently amended) The method of claim 8, further comprising allowing the displayed values to become temporarily transparent allowing visual examination of underlying displayed information without dismissing the ~~parent first and second display~~ child data tip windows.

13. (Currently amended) A system for displaying data tips related to ~~a cursor-selected an~~ object displayed on a computer screen, the system comprising:
a computer screen to display ~~a cursor-selected the~~ object and the data tips;
a processor for executing instructions corresponding to the method of:
determining that a cursor is positioned to point at the ~~cursor-selected object on the computer screen, wherein the cursor-selected object is an object, wherein the object represents a variable incorporated into a line of program code; in a listing of program code under development;~~

loading and evaluating the ~~cursor-selected~~ object to determine if the ~~cursor-selected~~ object:

has a variable value associated with the variable;

has related data sub-items; and

if the related data sub-items are capable of expansion into lower-tier sub-items;

assembling variable values for the ~~cursor-selected~~ object and the related data sub-items;

and

displaying the variable values of the ~~cursor-selected~~ object in the data tips using a first parent data tip window located adjacent to the cursor selected object[[]];

displaying the related data sub-items in a second child data tip window, wherein the ~~cursor-selected~~ object and the related data sub-items are related in a parent and child relationship, the second child data tip window having an expansion widget indication of the lower-tier sub items if the lower-tier sub-items exist; ~~wherein the expansion widget indication of the lower-tier sub-items is a symbol to indicate that lower-tier sub-items exist and~~

~~can be selected~~ determining that the cursor has been positioned upon the expansion widget indication; and

displaying for display in a third an additional data tip window simultaneously with the ~~first and second window~~ parent and the child data tip windows, and ~~wherein the first window and the second window overlay~~ overlying at least a portion of the listing of the program code ~~under development~~.

14. (Currently amended) The system of claim 13, wherein evaluating the ~~cursor-selected~~ object further comprises evaluating an expression associated with the ~~cursor-selected~~ object.

15. (Currently amended) The system of claim 13, wherein displaying the values of the ~~cursor-selected~~ object further comprises displaying a variable associated with the ~~cursor-selected~~ object and values of the variables variable.

16. (Cancelled)

17. (Currently amended) The system of claim 13, wherein the parent data tip window becomes temporarily transparent upon request allowing visual examination of underlying displayed information without dismissing the parent data tip window.

18. (Currently amended) A machine-readable storage medium having instructions therein, executable by a machine to perform a method comprising:

determining that a cursor on a computer screen is positioned to point at the ~~cursor-~~
~~selected object on the computer screen, wherein the cursor-selected object is an object, wherein~~
~~the object represents a variable incorporated into a line of program code that is currently~~
~~displayed on the computer screen; in a listing of program code under development;~~

loading the cursor-selected object;

evaluating the ~~cursor-selected~~ object to determine if the ~~cursor-selected~~ object:

has a variable value associated with the variable;

has related data sub-items; and

if the related data sub-items are capable of expansion into lower-tier sub-items;

assembling variable values for the ~~cursor-selected~~ object and the related data sub-items,
wherein the ~~cursor-selected~~ object and the related data sub-items are related in a parent and child
relationship; and

displaying on the computer screen the variable values of the ~~cursor-selected~~ object in a
~~first display parent data tip~~ window along with an expansion widget indicator of the related data
sub-items, the display also including the lower-tier sub-items in a ~~second display child data tip~~
window ~~that is launched upon activation of the expansion widget indicator, the first parent and~~
~~second display child data tip~~ windows displayed simultaneously and ~~overlay~~ overlying at least a
portion of the listing of the program code ~~under development.~~

19-20. (Canceled)

21. (New) A computer-implemented method for indicating on a computer display, the values
of variables in a software program, the computer-implemented method comprising:

displaying on the computer display, an expression that is a part of the software program,
the expression containing a variable;

detecting the positioning of a pointer upon the variable;

displaying thereon, a first data tip window showing a first expanded version of the
variable, the first expanded version showing at least one individual data element that defines the
variable, together with a data value for the at least one individual data element;

detecting the positioning of the pointer upon an expansion widget contained in the first data tip window; and

displaying thereon, a child data tip window showing a second expansion version of the variable, the second expanded version showing the at least one individual data element together with additional individual data elements that define the variable, the second expansion version further showing corresponding data values for each of the additional individual elements.

22. (New) The method of claim 21, wherein the corresponding data values are editable data values.

23. (New) The method of claim 22, further comprising:

detecting the positioning of the pointer upon a first individual element inside the child data tip window; and

displaying thereon, an editing menu showing a list of editing operations that can be performed upon the first individual element contained in the child data tip window.

24. (New) The method of claim 23, wherein the list of editing operations comprises editing an editable data value corresponding to the first individual element contained in the child data tip window.

25. (New) The method of claim 24, wherein the editable data value is a numeric value.

26. (New) The method of claim 24, wherein the editing operations comprise at least one of a) a copy operation, b) a paste operation, c) a “change to a binary display” operation, or d) a “change to a decimal display” operation.

27. (New) The method of claim 21, wherein the expression is displayed on the computer display as a result of execution of a breakpoint contained in the software program.

28. (New) The method of claim 27, wherein the first variable is incorporated into the expression prior to the expression being displayed on the computer as a result of execution of the breakpoint.
29. (New) The method of claim 21, wherein the first variable is a pre-existing element of the expression prior to the displaying of the expression on the computer.
30. (New) The method of claim 8, wherein the expression is currently displayed on the computer screen as a result of execution of a breakpoint contained in the program code.